



Verksamhetsberättelse 2009

Anna Nordling
Ingrid Nohlgren
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Förord

Nätverket Olja & Gas har sedan starten 2001 arrangerat ett antal seminarium per år i syfte att skapa en plattform för utbyte och diskussioner kring frågor relaterade till de fossila bränslena. Seminarierna har varit uppskattade med många intressanta talare och givande diskussioner. Nätverket har under året fått cirka 50 stycken nya medlemmar. Det är glädjande att se att nya medlemmar kontinuerligt ansluter sig till nätverket.

NOG har under 2009 arrangerat fem stycken seminarier. Dessutom genomförde nätverket två stycken mindre evenemang, ett kort efter seminariet den 11 juni och ett i mitten av november. Utöver detta utfördes även två partnerträffar under året, medverkade gjorde nätverkets näringslivspartners och medlemmarna i NOG:s programråd.

På NOG:s hemsida finns referat och presentationer från de seminarier och studieresor som nätverket anordnar. Kalendarier uppdateras kontinuerligt med datum för och information om kommande seminarier och det finns dessutom information och nyheter kopplat till olja, gas, kol och andra energirelaterade ämnen.

Nätverkets huvudfinansiärer är:

Energimyndigheten
Myndigheten för Samhällsskydd och Beredskap (MSB)
Ångpanneföreningens forskningsstiftelse (ÅFORSK)

Partners under 2009 var:

Preem Petroleum
Nynäs
Statoil Sverige
Svenska Shell
Fortum Värme Sverige
Göteborg Energi
Vattenfall
Eon Gas Sverige

Innehållsförteckning

Nätverkets inriktning och syfte	4
<i>Bakgrund</i>	
<i>Nätverket har två övergripande syften</i>	
Seminarier under 2009	5
<i>Europas framtida gasförsörjning – trygghet eller väntan på nya kriser?</i>	
<i>Kursändring i USA – vision eller verklighet</i>	
<i>Svensk uppströms oljeindustri – utmaningar och framtidsutsikter</i>	
<i>Energiscenarier för en hållbar framtid – fungerar kopplingen mellan vetenskap och verklighet?</i>	
<i>Indien – energiotmaningar i en tillväxtregion</i>	
Medlemsantal	8
Hemsida www.nog.se	8
Partners	9
Mindre tillställningar	9
Appendix A: <i>Europas framtida gasförsörjning – trygghet eller väntan på nya kriser?</i>	10
Appendix B: <i>Kursändring i USA – vision eller verklighet</i>	20
Appendix C: <i>Svensk uppströms oljeindustri – utmaningar och framtidsutsikter</i>	26
Appendix D: <i>Energiscenarier för en hållbar framtid – fungerar kopplingen mellan vetenskap och verklighet?</i>	31
Appendix E: <i>Indien – energiotmaningar i en tillväxtregion</i>	36

Nätverkets inriktning och syfte

Bakgrund

De fossila bränslen och särskilt oljan har en avgörande betydelse för landets energiförsörjning trots de satsningar på alternativ för att minska importberoende och värna miljön som skett under de senaste decennierna. Oljans funktion i samhället är flerfaldig; råmaterial till petroleum- och plastindustrierna, och till drivmedel. Alternativ i form av t.ex. förnybar el i plug-in-hybrider eller biodrivmedel finns men ännu inte i någon större utsträckning i volym och utbyggd infrastruktur. Inom överskådlig tid kommer de fossila bränslen fortsätta att vara nödvändiga för Sveriges energiförsörjning.

Nätverket har två övergripande syften

Vårt samhälle och välfärd är starkt beroende av tillgång på energi i olika former. Kunskap om alla tillgängliga energiförsörjningsalternativ är således i högsta grad en riksangelägenhet.

Syfte 1: Underlag för en bred energipolitisk debatt

Nätverket skall bidra till att ta fram objektivt underlag för en bred energipolitisk debatt. Det är nödvändigt att oljans och gasens betydelse för viktiga samhällsfunktioner är kända och att värdefull kunskap om olja, gas och kol bevaras och utvecklas. Det gäller även i rådande situation då samhällets fokus sedan många år varit helt inriktad på förnyelsebara energikällor. De olika energislagen låter sig olika lätt substitueras. Det handlar om såväl betydande kostnader som det faktum att vissa förändringar tar betydligt längre tid än andra. De tillgängliga alternativens tekniska möjligheter och de kostnader som förknippas med dem måste bli kända. Detta gäller även hushållnings- och besparingsalternativens praktiska och ekonomiska konsekvenser. Förändringarna i teknik och infrastruktur måste bevakas.

Syfte 2: Försörjningstrygghet och beredskap

Sårbarheten hos det moderna samhället diskuteras normalt endast sporadiskt. Störningar i elförsörjning och telekommunikationer blir varje vinter ett flitigt diskuterat ämne i samband med snöfall främst i landets sydligare delar. Däremot tas den underliggande tillgången på energi för given. Internationella kriser kan dock rubba energisystemet i grunden. Trender i energiefterfrågan liksom såväl förutsebara och oförutsebara förändringar i utbudet kan påverka oss på ett avgörande sätt. Möjligheten för att vi skall få uppleva allvarliga störningar i energisystemet kan inte uteslutas. Nätverket skall således verka för att beredskapsfrågorna inom energiområdet lyfts fram och diskuteras. Framsynthet är viktigt och kräver att en aktiv omvärldsbevakning och analys bedrivs och kommuniceras. Riskerna för energikriser bör belysas på ett ickealarmistiskt sätt så att det skapas en förståelse för behovet av beredskapsåtgärder. Energiberoendet och sårbarheten liksom även lösningarna på problemen delar vi med övriga EU-länder varför det är nödvändigt att diskutera beredskapsfrågorna ur ett EU-perspektiv.

Stockholm, april 2010

Seminarier under 2009

Under 2009 har sammanlagt fem stycken seminarier anordnats.

Teman har valts efter de frågor som har varit aktuella under året, bland annat har situationen i USA analyserats med hänsyn till de stora förändringarna som skett, och en djupdykning i det stora tillväxtlandet Indien gjordes även i slutet av året.

Titlarna för årets seminarier har varit:

- Europas framtida gasförsörjning - trygghet eller väntan på nya kriser?
- Kursändring i USA - vision eller verklighet?
- Svensk uppströms oljeindustri - utmaningar och framtidsutsikter
- Energiscenarier för en hållbar framtid- fungerar kopplingen mellan vetenskap och verklighet?
- Indien - energiutmaningar i en tillväxtregion

Nedan följer korta sammanfattningar av seminarierna. För seminariernas referat i fullängd, se Appendix A – F.

Europas framtida gasförsörjning – trygghet eller väntan på nya kriser?

090203

Europa blir allt mer beroende av import av naturgas. Situationen innebär ökad sårbarhet, som vi sett exempel på de senaste veckorna i konflikten mellan Ryssland och Ukraina. Seminariet satte möjligheterna för en säker försörjning av gas till Europa i fokus, med resursmässiga, politiska och ekonomiska utgångspunkter. Målet var att försöka se problemen från flera håll: Producenternas och marknadernas beroende är ömsesidigt och förtroende och samarbete är essentiella beståndsdelar för att åstadkomma nödvändiga investeringar.

Seminariet ville belysa och söka svar på bl.a. följande frågor:

- Vilka är de realistiska försörjningsmöjligheterna för Europa?
- Vilka konklusioner ska Europa dra av kriserna mellan Ryssland och grannländerna och kommer Europa att kunna tala med en röst?
- Kan ökad LNG-import ge större säkerhet?
- Vilka är Rysslands mål för energisamarbetet med Europa och vilken inverkan har säkerhetspolitiken?
- Kan finanskrisen och uppskjutna investeringar bädda för en ny försörjningskris?
- Varför spelar naturgasen en så liten roll i Sverige?

Kursändring i USA – vision eller verklighet?

090611

Den nyttillträdde President Obama har i ett raskt tempo påbörjat många förändringar i USA:s energi- och klimatpolitik. Presidenten har med mottot "New Energy for America" bland annat satt fokus på energieffektiviseringar och miljöteknik och den nya administrationen har dessutom tydligt signalerat att USA nu är redo att engagera sig i internationella samarbeten för att möta klimathotet. Kongressen kommer sannolikt att innan årets slut besluta om en klimatlag som sätter kvantitativt bindande nationella utsläppsmål för år 2020, 2030 och 2050.

En omfattande förändring av det amerikanska energisystemet kommer emellertid att ta tid. Olja, naturgas och kol kommer även fortsättningsvis att vara ryggraden i det globala såväl som det amerikanska energi-systemet. Kan en omställning ske så snabbt som Obamas plan förutsätter? I vilken grad är "energy independence" ett nåbart mål? Vilka konsekvenserna bli för internationella relationer och USA:s förbindelser med de oljeproducerande länderna?

NOG-seminariet presenterade den nya administrationens energi- och klimatpolitik, bland annat innefattande massiva ekonomiska satsningar på hållbar energi. Vi belyste ambitionen att göra omställningen av energisektorn till ett medel att bekämpa den ekonomiska krisen: "A Green New Deal". Vi diskuterade också vad den amerikanska nyorienteringen av klimatpolitiken kan innebära för det internationella samarbetet och vad betoningen av försörjningssäkerhet kan få för säkerhetspolitisk betydelse.

Svensk uppströms oljeindustri - utmaningar och framtidsutsikter

090909

Svensk oljeindustri förknippar vi framför allt med import och med raffinering och marknadsföring. Det finns dock ett antal intressanta företag med svensk anknytning som verkar ute i världen, i konkurrens och samverkan med de internationella oljebolagen, inom produktion av olja och gas; d v s "uppströms". Några av dem är noterade på den svenska börsen.

Idag präglas olje- och gasutvinningen av möjligheterna att nyttja mer svåråtkomliga fyndigheter. Hur ser den tekniska utvecklingen ut för oljemarknaden uppströms framöver? Behöver ett mindre företag "nischas" sig mot vissa prospekterings- och produktionstekniker för att bli framgångsrika eller spelar man på samma plan som de större bolagen? Vilka marknader erbjuder speciellt intressanta möjligheter? Hur kan mindre bolag hantera riskerna och de finansiella kraven?

NOG-seminariet den nionde september samlade några av dessa företag och gav en introduktion av och en fördjupning i utmaningar, möjligheter och framtidsutsikter för de "svenska" uppströmsbolagen. Vi fick veta mer om företagets struktur och bakgrund och deras strategier för att möta utmaningar som relativt små bolag på en marknad med stora penningstarka aktörer. Seminariet tog ett helhetsgrepp på dagens olje- och gasmarknad genom de svenska bolagens ögon.

Energiscenarier för en hållbar framtid - fungerar kopplingen mellan vetenskap och verklighet?

091022

Kvalificerade bedömningar av den framtida, globala energiförsörjningen är komplexa och rymmer många osäkerheter. Samtidigt är vi beroende av dem för rationell planering och politiska beslut. Faktorer som befolkningstillväxt, arbetsmarknad, migration och ökande välbefinnande driver utvecklingen inom ramar som sätts av miljöns bärkraft och tillgången till resurser som energi och vatten. Alla dessa faktorer samspekar och ställer krav på morgondagens tekniska lösningar, politik och ekonomi. Ett av de verktyg vi idag använder för att hantera energirelaterade problem är energiscenarier.

Seminariet beskrev hur olika organisationer arbetar med energiscenarier med fokus på följande huvudområden:

- Hur byggs energiscenarier upp, vilka parametrar inkluderas och kanske än mer intressant, vilka exkluderas?
- Vad säger de olika scenarierna oss och vilka implikationer får de globalt och regionalt?
- Hur används resultat från olika energiscenarier som grund för politiska beslut kopplade till energi och klimat?

Indien- energiutmaningar i en tillväxtregion

090203

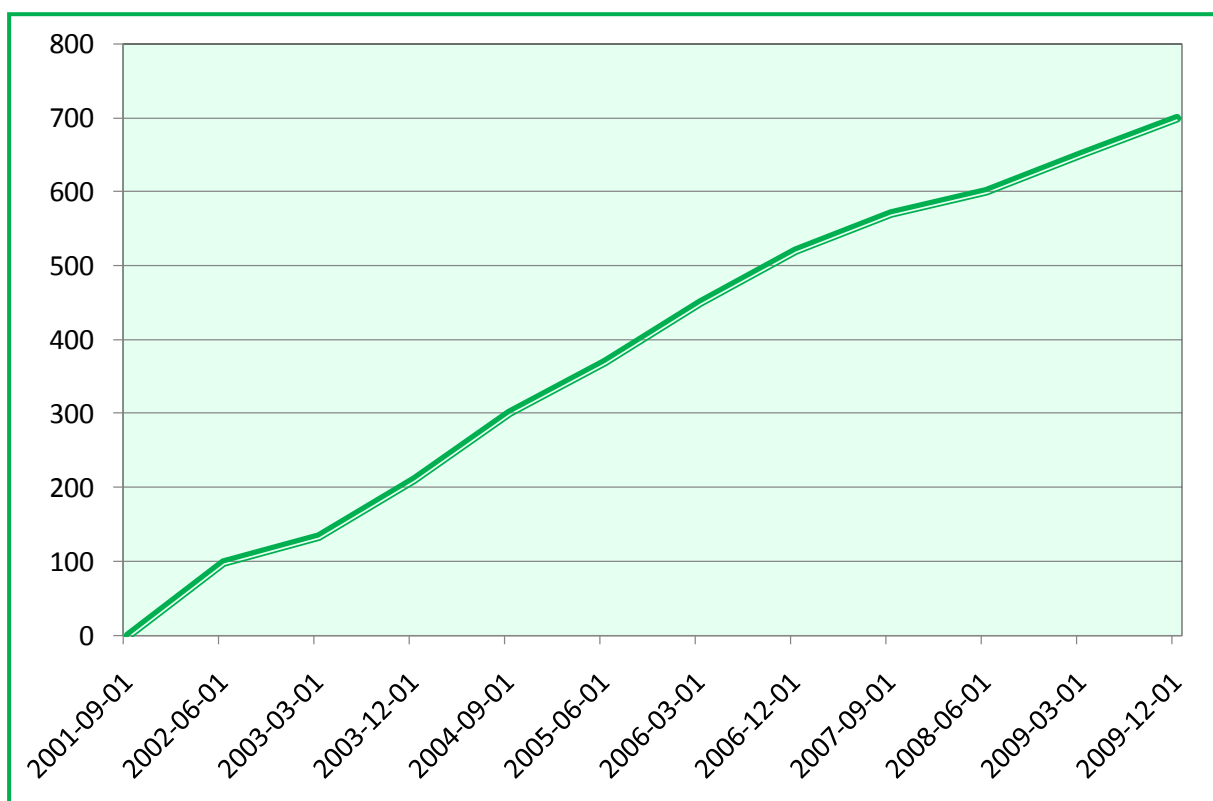
Indien är det land efter Kina som i väst ofta lyfts fram som det stora tillväxtlandet inom en mängd olika områden. En fortsättning på den ekonomiska tillväxten som landet upplevt under de senaste decennierna innebär dock en mängd utmaningar – inte minst inom energiområdet då tillgångarna på inhemsk energi är relativt knappa.

En allt högre energikonsumtion i länder vid indiska oceanen ger vid hand en föränderlig bild av tillgång och efterfrågan i området. Vissa delar av denna region präglas av instabilitet och andra av ett ömsesidigt misstroende. Dessutom har icke-konventionella hot som exempelvis piratattacker fått inverkan på energitransporterna i indiska oceanen och har bland annat medfört avtal om energisäkerhet inom ramen för regionala samarbetsorganisationer.

NOG-seminariet inleddes med en allmän bakgrundsbeskrivning. Därefter belystes en rad frågor som rör Indiens och de närliggande ländernas nuvarande och framtida energiförsörjning och -säkerhet. Seminariet avslutades med en presentation av indiska hushålls energitillförsel på mikronivå.

Medlemsantal

Nätverket har under 2009 fått cirka 50 stycken nya medlemmar; det totala antalet medlemmar är nu uppe i drygt 700 personer. Det har inte skett någon aktiv medlemsrekrytering under året utan nya medlemmar har ansökt om medlemskap via formuläret på nätverkets hemsida. De nya medlemmarna representerar, liksom tidigare, stora delar av energisektorn, både myndigheter, akademi och företag.



Figur 1. Utveckling av medlemsantal i NOG.

Hemsidan: www.nog.se

Nätverket Olja & Gas hemsida under adressen www.nog.se innehåller information om:

- NOG – hur NOG kom till.
- Seminarier – inbjudan till seminarier och referat från alla seminarier.
- Svensk beredskap – hur gör Sverige?
- Bli medlem i NOG – direktanmälan via Internet
- Medlemmar – organisationer som är representerade i NOG
- Studieresor – information om NOG:s studieresor
- Kalendarium – vad händer i världen inom olja, gas och kol.
- Fakta om olja, gas och kol – fakta, analyser, rapporter med mera.
- Nyhetsarkiv – dagsfärska nyheter från världens alla hörn.
- Länkar – länkar till myndigheter, företag, organisationer, nyhetsservice och övrigt.

Hemsidan fungerar som en informationspunkt för nätverkets medlemmar, både för kommande seminarium och andra aktiviteter samt för nyttig allmän information, nyheter och länkar. Hemsidan har uppdaterats kontinuerligt med fakta, nyheter och länkar etc. Sidan har under 2009 haft ett relativt stadigt antal besök med undantag för semestermånaderna.

Partners

Nätverket Olja & Gas har ett par industriella partners som anser det viktigt att nätverket lever kvar och vidareutvecklas. Dessa partners har under 2009 varit E.ON, Fortum, Göteborg Energi, Nynäs Petroleum, Preem, Shell, Statoil och Vattenfall. Under 2009 anordnades två partnerträffar.

Mindre tillställningar

Under 2009 anordnades två lite mindre evenemang. Det första ägde rum 15 juni, kort efter seminariet den 11 juni och det andra i mitten av november.

Träff med ambassadör Morningstar

Den 15 juni anordnades en träff med ambassadör Morningstar där ca 10 st specialinbjudna gäster deltog tillsammans med representanter från NOGs programråd. NOG seminariet den 10 juni handlade om USAs energipolitik och NOG bad ambassadör Morningstar att kommentera detta ämne under träffen 15 juni, samtidigt gavs också möjligheter till en mer informell diskussion med ambassadören.

Träff med ambassadör Vaclav Bartuska

Det andra evenemanget ägde rum i mitten av november i ÅFs hus i Solna. Representanter från NOGs Programråd samt ett antal specialinbjudna gäster bjöds in till en träff med Tjeckiens särskilde ambassadör för energisäkerhet, Vaclav Bartuska. Vaclav har sedan flera år tillbaka arbetat som Tjeckiens särskilda sändebud för energisäkerhet och han är en av de mest kunniga och erfarna diplomaterna i Europa inom energiområdet. Han var personligen engagerad i hanteringen av gaskrisen i januari 2009. Vaclav hade rollen som informell rådgivare åt det svenska ordförandeskapet i EU under 2009.

Under träffen talade Vaclav om möjligheterna att förbättra Europas energisäkerhet genom att dels vidta åtgärder på den europeiska gasmarknaden, dels bedriva en effektiv energidiplomati gentemot länder som Ryssland och Ukraina. Han gav också personliga glimtar från förhandlingarna i januari 2009. Vid träffen medverkade även Tjeckiens ambassadör, Jan Kara.

Appendix A: Europas framtida gasförsörjning – trygghet eller väntan på nya kriser?

NOG-Seminarium den 3 februari 2009

Hanna Paradis och Stefan Grönkvist

2009-02-09

Förord

Europa blir allt mer beroende av import av naturgas. Situationen innebär ökad sårbarhet, som vi sett exempel på de senaste veckorna i konflikten mellan Ryssland och Ukraina. Seminariet satte möjligheterna för en säker försörjning av gas till Europa i fokus, med resursmässiga, politiska och ekonomiska utgångspunkter. Målet var att försöka se problemen från flera håll: Producenternas och marknadernas beroende är ömsesidigt och förtroende och samarbete är essentiella beståndsdelar för att åstadkomma nödvändiga investeringar.

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- Varför spelar naturgasen en så liten roll i Sverige?

Talare var:

Richard Hall

Manager EU Affairs, International Association of Oil and Gas Producers

Rien Herber

Vice President Exploration for Shell in Europe

General Manager, NAM (joint Shell/ExxonMobil EP venture in the Netherlands)

Urban Kärrmarck

Expert, internationella energimarknader, Energimyndigheten

Nodari Simoniya

Director, Centre for Energy Studies, Institute of World Economy and International Relations, Moskva

Urban Kärrmarck, Energimyndigheten

Urban Kärrmarck is an expert on International Energy markets at the Swedish Energy Agency. He has recently written the report "Naturgasen i ekonomins och politikens tjänst" (which means "Natural Gas in the Service of the Economy and Politics") that describes the political and economical driving forces for the development of the natural gas market in Europe.

- Urban had been asked to elaborate on three different topics for the day;
- How natural gas was introduced in Europe and why it became a major energy resource in a relatively short time.
- The reasons for the relatively low penetration of gas in Sweden
- Security of supply for natural gas

The Gasification of Europe

The gasification of Europe is a history not only about the transformation of the European energy systems, but also a transformation of vital policy fundamentals in European politics, including the economic policy. The gasification became one tool among other tools in tearing down national borders and forming a more integrated common economy with common policies; a journey from isolation to integration. Eventually it also became a catalyst for many countries to leave protectionism and embrace the idea of globalisation. One of the factors that influenced the ending of the cold war was that the Soviet Union became an important gas exporter to the rest of the world.

In the 1960s, Europe was an island in an ocean of natural gas. Security of supply was not an important issue since the gas resources often were located quite close to the consumers. The possibility of replacing oil with a cheaper alternative played a larger role in the expansion of the infrastructure and natural gas became a success story right from the beginning. Before the end of the 1960s, the market share was over 5 %, rising to 15 % in the next five years and there were several reasons for the competitiveness of gas;

Bilateral trade and the fact that many countries had policies to use domestic energy resources created high non-transparent prices that gas producers easily could undercut and still make a reasonable profit. The domestic resources were commonly more expensive than imported energy resources, but utilising them created jobs. Subsequently, the pricing and the low price risk in the domestic value chain led to a political preference for gas and, in turn, this led to a severe blow for the coal industry; as we know today, coal became the victim of the gas expansion in Europe.

The introduction of a new economic paradigm in the world; Friedman replacing Keynes, opened the isolated European markets to the world. In the 1990s, markets were deregulated, and state aid was banned in many countries. Gas was mainly introduced because of its competitiveness, but it also became a driving force and a tool for the transformation of European politics and economy.

Swedish Gas network

There are three possible explanations to the lack of gas in Sweden:

- lack of knowledge and/or ignorance
- political resistance
- gas was uncompetitive

The possibility that there would have been a lack of knowledge in the area of natural gas can be ruled out. Sweden started as early as the 1960s with the first gas investigation, followed by at least 25 other recorded larger projects.

The political resistance was mainly due to the ambitious programme for nuclear energy in Sweden, with one project commissioned as early as in the 1950s. The political split in the nuclear discussions spilled over on the gas issue, often seen as an inferior alternative to nuclear energy, and a curiosity is that this was a view shared by both by the pro and con side of the nuclear debate in the 1970s. Although, the main reason probably was that gas was unable to compete on the Swedish market, with electricity prices based on hydro power. No supplier was willing to offer a border price cheap enough to give the investors a reasonable margin on the investment.

Security of supply

There are three risks associated with supply of energy:

- Political risks
- Commercial risks
- Technical risks

The commercial risks mainly constitutes of the price and volume risks. The reason why the deregulation of the gas market has taken so long is probably the large commercial risks related to large infrastructure investments.

The technical risks are mainly associated with necessary redundancy in the system. It is easy to solve by, e.g., building several interlined transmission lines, gas storages, or by keeping spare capacity in grids, but most technical solutions are very expensive.

The political risks are reduced by:

- Having several suppliers
- Having surplus capacity in transmission lines
- Gas storages
- Fuel switching capabilities
- LNG supply

At some point the costs outweigh the benefits and the gas market does not have the possibility to easily break the status quo. It is a long term relationship between supplier and consumer and they have to rely on each other. As long as both parties are equally dependent on the gas flow, no party has any incentive to change the relationship.

LNG could certainly alleviate the problems with security of supply. But, only if several large suppliers are willing to invest in oversized liquification capacities, transportation capacities and regasification capacities. This does not make sense commercially since the investments rises the costs substantially and, at the same time, presses the price on the European market.

The relationship between Russia and Europe

Russia and EU are mutually interdependent since Russia provides almost 30 % of all gas consumed and 20 % of all oil consumed in the European Union. If the imports would stop, the EU as a whole would be facing a catastrophe. On the other hand, 80 % of all Russia's export revenue from the energy trade comes from the EU. Urban Kärrmarck concluded by pointing out that his guess is that Russia under these circumstances not will use the gas trade with the EU for political blackmailing.

Nodari Simoniya, IMEMO

Professor Nodari Simoniya has been working in the energy field for many years, advising and representing Russia in energy and foreign relations. His current positions are as follows:

- Director, Center for Energy Studies, IMEMO RAS
- President, Russian National Partnership “Human Dimensions of Global Change”
- Head of International Section, Russian Academy of Sciences
- Head of Department "Political Problems of World Energy", State University: Higher School of Economics.

The following text is based on a summary of the presentation written by professor Simoniya with some additional comments by the NOG secretariat.

Professor Simoniya started the presentation by commenting upon the conflict between Russia and Ukraine. Many of the Eastern European countries have been shaped by the history of the Soviet Union and cannot forget this. There are strong nationalistic feelings in many countries and Ukraine is an example of this. President Jusjtjenko has because of this caused a lot of harm to many European countries. Professor Simoniya then continued by answering the question: what can Russia offer, in view of the resource base and growing national consumption?

First of all, what Russia is doing in the framework of energy (gas) cooperation with the EU. The following two tables clearly indicate the importance of Russia:

EU – 27 natural gas supply, 2006

	Imports (bln.m3)	% share of all supply	% share of total imports
Russia*	145	26	42
Norway*	88	16	26
Algeria**	58	10	17
Other**	51	9	15
Indigenous output	218	39	-
Total	560	100	100

* by pipelines

** by pipelines and LNG

This table was composed by the Petroleum Economist from the data of the well-known research and consulting US Center Cambridge Energy Research Association (CERA). There is another, more detailed and little bit different table prepared by Cedigaz and also published by the Petroleum Economist.

EU – 25 natural gas supply, 2006 (in bln.m3)

Country	By pipe	LNG	Total
Russia	151,46	-	151,46
Norway	84,0	-	84,0
Algeria	35,62	18,95	54,57
Libya	7,69	0,72	8,41
Nigeria	-	13,46	13,46
Egypt	-	8,45	8,45
Qatar	-	5,36	5,36
Oman	-	1,0	1,0
Trinidad & Tobago	-	3,16	3,16

Those two tables demonstrate that Russia is the main source of natural gas supply to EU, and judging by everything, Russia's leading role in the nearest and medium-term perspective will remain intact. However, the tables also reveal that the supply of natural gas to Europe is not a monopoly and, e.g. Norway have plans to double their supplies to Europe within the next decades. A number of factors confirm the given assumption. Firstly, as is known, Russia has the world's largest proved reserves of natural gas – 26,3%. Secondly, according to existing forecast indigenous output in Europe will continue to decrease, and by year 2020 will be around 2% of all supply. Thirdly, the euphoria which only few years ago reigned in mass media expert publications that natural gas, just like oil, might turn into a global commodity, proved to be wrong. Of course, the gas market globalisation process is still on, but its formation is far from completion, and will take considerable amount of time due to both technological and financial reasons. As a result, LNG still remains mainly a region-oriented commodity. Around 135.2 bcm out of the overall volume of 211 bcm LNG exports in 2006 were consumed in the Asia Pacific region and a normal year about 8-10% of the LNG is sold on the spot market, while the rest is sold on long contracts.

Recently, Gazprom published the investment program for 2009 and it is more than 120 bln. rub., which is a larger programme than the previous year. This also includes internal gasification projects. By the way, irrespective of the all obstacles and difficulties created by "Gazprom" for independent producers in Russia, they are persistently increasing their output level. According to previous production estimates made by Gazprom independents (NOVATEK, Lukoil, TNK-BP, UKOS), will increase their production from 100 bcm in 2008 to 138-148 bcm in 2010.

Professor Simoniya continued by answering the second question: what are Russia's objectives for energy cooperation with Europe?

Just some of these objectives:

- a) Diversification of supply routes (Nordstream and Southstream projects) enhance security of supply by decreasing possibility for some transit countries to violate their obligations;
- b) Another major priority for "Gazprom" in Europe is to increase the working gas storage capacity. This includes realisation of joint gas storage projects;
- c) To acquire gas transport and distribution assets in some European countries where Russia deliver its gas under long-term contracts. It is done and will be done on reciprocity base (i.e. in exchange of access for European corporations to Russian gas and oil fields, like it is already realized between Gazprom, BASF, and E. ON or between Gazprom, StatoilHydro, and Total.

Of course, Gazprom is not Santa Claus. As a commercial corporation it pursues its own selfish commercial interests, which not always coincide with Russia's national interest (It behaves like all other major companies in the world). But objectively, by his multibillion dollar investments in European export infrastructure, Gazprom makes real contribution to formation of a single European

gas market and intensifies interdependence (not one-sided dependence) between Russia and EU on mutually beneficial bases. Professor Simoniya wonders why there are so much noise about the interdependence between Russia and EU. Must it be that one part, i.e. EU, is in the total control? He pointed out that energy supply is a two sided coin, security of supply and security of demand.

Finally, Professor Simoniya elaborated on energy-related relations between Russia an EU (focusing on gas), and policies for security considerations.

Observing energy cooperation between Russia and EU, it is difficult to get rid of the feeling of unnatural discrepancy of political-diplomatic and economic-energy aspects of these relations. That discrepancy was far from accidental and during last several years even aggravated: the policy and diplomacy have practically descended to the “cold peace” level, while economic and energy cooperation increased to an even higher and, I would say, qualitatively new level.

Maybe I am wrong in my assessment, Professor Simoniya presumed, but it seems to me that the European Energy Commission is too dominated by people suffering from deficit of strategic vision. Adding to this is also their “anti Russian armoury” including the American slogan of “energy threat” from Russia. USA is not interested in the energy security for Europe, they just want to unite EU against Russia in order to weaken Russia. This idea came to my mind when I carefully read a new package of proposals on “Energy Policy for Europe”. However, later I was happy to know that practically the same assessment of anti-Russian spirit in this document was shared by prominent western energy experts, see e.g. Jonathan Stern – head of gas research in the Oxford Institute for Energy Studies or group of experts from CERA – in: Petroleum Economist, November 2007, pp. 14, 16. I am not going to repeat here all their arguments, but one seems to me new and very convincing: they state that such a policy of the European Commission “might be dangerous, partly because it alienates Russia and partly because the countries from which new gas supply is being targeted – Turkmenistan, Kazakhstan, Azerbaijan, Iran and Iraq – are not necessarily more reliable than Russia and in the case of the Middle Eastern countries, less so”. To this list I just want to add one more country, which is considered as a key of Nabucco project – Turkey: less than half a month ago the Prime-Minister of Turkey in a speak in Brussels stated that his country may reconsider it’s position on Nabucco in case EU will not resume energy talks as a part of general negotiations on Turkey’s admission to EU.

Richard Hall, OGP

Richard has thirty five years experience in the oil and gas industry, most of this time employed in European exploration and production operations working for BP, British Gas and Shell. He is a qualified engineer with experience gained in a number of operational, engineering and commercial managerial roles. Richard has worked offshore as an Offshore Installation Manager and onshore in project and asset management. In recent years he has applied his engineering and operations experience to commercial and regulatory affairs activities, leading negotiations and providing advocacy within the industry and with national governments.

In OGP Europe, Richard works with the European Institutions on behalf of the oil and gas producing industry and he is based in Brussels.

Richard represents OGP, the International Association of Gas Producers. The members account for more than half of the worlds oil output and about one third of global gas production.

The global energy challenge

It is projected by the IEA (International Energy Agency) that global energy demand will continue to grow during at least the next 30 years. More people need access to more energy per person, at the same time we need to lower our CO₂-emissions to meet the challenge of climate change. However, the IEA predicts that the European demand for energy will increase at a lower rate compared to the rest of the world; about 1 percent annually until 2030. We may even see a decline in European gas demand during the years to come; mainly because of two reasons:

- Increased efficiency measures
- Global recession

As indigenous resources decline, the demand for imported gas to Europe will increase. European production will decline to about 20 percent of needs in 2030. Bringing to the picture is also estimates of global reserves-to-production ratios of about 60 years for natural gas and that the reserves in Russia and Qatar accounts for approximately 56 percent of the proven global reserves. There are several alternatives to fill the gap between indigenous European resources and the increasing need for gas; the OGP position is that we probably will need all alternatives to meet demand in the future, both LNG import and new pipeline infrastructure.

World Gas Production Forecast

The European gas production peaked in 2004 and is predicted to decline. Gas production in Russia, Turkmenistan and Kazakhstan, that may be future large exporters to Europe, have a projected increase in production to 2030. Worldwide gas production is predicted to increase to 600 bcm per year until 2020. Bringing the gas to Europe means huge investments in pipelines; several projects in ongoing such as Nabucco, South Stream and Nord Stream. OGP says that the EU should be not to choose a winner of the new supply routes. LNG will play an increasing role in the future, predicted to meet 16 percent of global gas demand in 2015. Nevertheless, the key issue is to drive the investments through.

To be able to invest in new projects for the future, several areas need to be alerted:

- Environmental issues
- Security of supply
- Market liberalisation
- Foreign relations
- Investment
- Competition
- Technology development

Large infrastructure projects demand a continuous dialogue with the public. We have gone from NIMBY (Not In My BackYard) to BANANA (Build Absolutely Nothing Anywhere Near Anything) and need to work with the public to speed up permitting processes. To secure supply of energy in the future, both the resources of energy and the supply routes need to be more diverse. Richard believes that the continued opening of the market and the appliance of market mechanisms will play a large role to secure that the measures taken are proportionate. You have to remember that the EU gas market is different from the EU electricity market since the majority of the supply comes from external sources. Market liberalisation measures, such as third party access, will not have the same effects as it had when applied to the electricity market.

Richard Hall continued by noting that the interdependence between producers and consumers most probably will continue to increase. In order for Europe to continue being an attractive market for export, we will have to deepen our relations with producer countries and give clear signals about future gas demand. The key issue is not to add extra risk to an already high risk investment, for example by saying that on one hand Europe needs gas, but on the other hand, Europe does everything to get out of fossil consumption. The historic attractiveness of the EU gas market is not cast in stone and the increasing technical challenge of extracting gas from non conventional resources needs to be met by investments. In summary, the future is throwing several juggling balls at us that need to be handled at the same time. Richard Hall concluded his presentation by asking the audience about their opinion on what should be done on legislation/regulation, the fiscal regime, technology development, recruitment, and other possible issues for the future.

Rien Herber, Shell Exploration and Production

Rien Herber (1954) graduated as a geophysicist in Utrecht University in 1979 and started his Shell career in that same year in the research lab in Rijswijk in the seismostratigraphy group. Following assignments as production seismologist in Brunei and exploration team leader in Thailand for Shell's onshore concession, Rien Herber assumed a position in the NAM in the Netherlands as exploration team leader for the offshore in the early 90's when the big 3D seismic campaigns took place. He then moved northward to Norway as exploration manager for Norske Shell, during which period the deep water Atlantic Margin was opened. In 1998 he moved back to NAM as exploration manager. Still based in Assen, he was appointed in 2003 as Vice President Exploration for Shell in Europe. In this capacity he is responsible for the Shell operated exploration activities in the UK, Netherlands, Norway, Ukraine, Sweden and Ireland, non-operated Shell interests in Germany, Denmark and Italy as well as new exploration opportunities outside these countries. In addition to these responsibilities he is deputy to the General Manager in NAM (a joint Shell/ExxonMobil EP venture in the Netherlands).

The three hard truths

Rien used a diagram depicting global exploration history as a starting point for his presentation, illustrating that worldwide discovered volumes and average field size have been in steady decline since the late 1960s. At the same time, demand for energy is projected to increase considerably over the next decades. The role of fossil fuels will remain important and access to new resources is therefore key. In summary, Shell identifies three hard truths;

- Surging energy demand
- Supply will struggle to keep pace
- Environmental stresses are increasing

In addition, Rien Herber clarified the major issue of the last of the three hard truths:

"We will have to find solutions to reduce CO₂ emissions since fossil fuels will be a part of energy consumption at least till 2050 - or much longer."

Shell has published two scenarios, called Scramble and Blueprint, to foresee the consequences different actions will have on future energy demand and emissions. Some characteristics of the different scenarios are:

Scramble

Late reactions (to mitigate climate change):

- Volatile energy prices
- Knee-jerk reactions to climate events
- Flight to coal, biofuels, mandated renewables forced in
- Patchwork of national standards

Blueprint

Early actions (to mitigate climate change):

- Effective carbon pricing established early
- Aggressive efficiency standards
- Growth shifts to electrification
- Carbon capture and storage (CCS) emerges after 2020

In order to meet the challenges of climate change, Rien Herber expressed that he believed in coordinated global actions in the fields of energy efficiency and CCS.

Other major observations that will affect the future European gas market are that the gas consumption in Europe will experience a shift both regionally and relating to volumes. The largest increase in consumption is concentrated to Spain and Italy. The European gas reserves have decreased and will continue to do so and in due course of this development: Europe is facing a supply gap. What will fill that gap?

Europe will be increasingly dependent on distant supplies, both by pipelines and LNG. Shell is active in upstream activities in a large parts of Europe, and is taking a competitive position for the future. Technology is the key to continue to explore for European indigenous supply, mainly by developing techniques for small fields and minimising environmental damage. For example, Ormen Lange in deep water Norway is an innovative cross border gas project with all technology stationed at 1000 m water depth. Shell also takes initiatives to develop other conventional resources in deep water Atlantic as well as unconventional gas onshore Europe..

Unconventional gas exploration in Skåne

One of Shells exploration projects is of special interest for Sweden. Shell has a three year exploration licence in Skåne where they hope to find unconventional gas resources to be extracted from the Alum Shale. In case of success, there can be synergy between evacuation systems for natural gas with the biogas that is already being produced in the area. Rien Herber expresses that the vision for Sweden is, if the investigations have a positive result, to develop the gas resources with minimal environmental impact. One way to achieve this could be by developing an "invisible" production site. Sweden has a great tradition in engineering and the challenge is to develop such sites. If this succeeds, it could be an attractive spin-off for Swedish engineering companies in other parts of the world.

Appendix B: Kursändring i USA - vision eller verklighet?

NOG-Seminarium den 11 juni 2009

Hanna Paradis
2009-06-16

Förord

Den nyttillträdde President Obama har i ett raskt tempo påbörjat många förändringar i USA:s energi- och klimatpolitik. Presidenten har med mottot "New Energy for America" bland annat satt fokus på energieffektiviseringar och miljöteknik. Den nya administrationen har dessutom tydligt signalerat att USA nu är redo att engagera sig i internationella samarbeten för att möta klimathotet. Kongressen kommer till exempel sannolikt att innan årets slut besluta om en klimatlag som sätter kvantitativt bindande nationella utsläppsmål för år 2020, 2030 och 2050.

En omfattande förändring av det amerikanska energisystemet kommer emellertid att ta tid. Olja, naturgas och kol kommer även fortsättningsvis att vara ryggraden i det globala såväl som det amerikanska energisystemet. Kan en omställning ske så snabbt som Obamas plan förutsätter? I vilken grad är "energy independence" ett nåbart mål? Vilka kan konsekvenserna bli för internationella relationer och USA:s förbindelser med de oljeproducerande länderna?

NOG-seminariet presenterade den nya administrationens energi- och klimatpolitik, bland annat innefattande massiva ekonomiska satsningar på hållbar energi. Ambitionen att göra omställningen av energisektorn till ett medel att bekämpa den ekonomiska krisen: "A Green New Deal", belystes. Vi diskuterade även vad den amerikanska nyorienteringen av klimatpolitiken kan innebära för det internationella samarbetet och vad betoningen av försörjningssäkerhet kan få för säkerhetspolitisk betydelse.

Talare:

Robert B. Hilton

Public Affairs Officer, amerikanska ambassaden

Anders Hellner

Senior Adviser, Utrikespolitiska Institutet

Marcus Carson

Forskare vid sociologiska institutionen, Stockholms universitet

Robert B. Hilton, Embassy of the United States, Stockholm

Robert B. Hilton, Counselor for Public Affairs and Deputy Chief of Mission, Embassy of the United States, Stockholm

As Counselor for Public Affairs, Robert Hilton is responsible for the U.S. Embassy's engagement with the Swedish public for the purpose of increasing Swedish understanding of U.S. society, values, and policies. This is achieved through a number of activities, including liaison with the Swedish media, educational programs such as the Fulbright Scholarships, support for presentations of U.S. culture in Sweden, sponsorship of lectures by visiting American scholars, and arranging study visits to the U.S. for Swedish leaders. The thematic focus of his work is alternative energy cooperation between the United States and Sweden, the One Big Thing policy initiative undertaken by the Embassy under the leadership of Ambassador Michael Wood. From Ambassador Wood's departure in January 2009, Robert Hilton has served as the Deputy Chief of Mission of the Embassy.

Robert Hilton joined the United States Foreign Service in 1988. He served short tours at the U.S. Embassies in Tunisia, Yemen and Saudi Arabia, and then spent three years as Press Attaché at the U.S. Embassy in Dhaka, Bangladesh. From 1995-1999, he served at the U.S. Embassy in Moscow, Russia, where he managed a variety of educational and information programs intended to encourage political and economic reform. From 1999-2002, Robert served in the Office of European Press and Public Diplomacy in the Department of State in Washington, handling European Union and NATO issues as well as supporting U.S. public diplomacy efforts in the western Mediterranean European countries. In the Office of Nordic and Baltic Affairs, 2002-2004, he was involved in the conception and launching of the Enhanced Partnership in Northern Europe, e-PINE, a U.S.-Nordic-Baltic consultative mechanism. At the same time, he was Estonia Desk Office and managed implementation of a \$5 million assistance budget for the Baltic States.

Robert served as Public Diplomacy Officer in the State Department's Bureau of Population, Refugees, and Migration in 2004-2005, supporting U.S. assistance efforts for refugees, and arrived in Stockholm in February 2006 after completion of six months of Swedish training at the Foreign Service Institute.

Robert Hilton begins with the statement that energy is an important issue for the United States. The U.S. will still need more oil and gas, and if oil and gas sources are located in the US; they should be explored in an environmentally sound way. Currently, the U.S. has 7 – 8 % renewable sources in their domestic energy consumption compared to Sweden's 30 %. Therefore, some steps still remain for the U.S. to take, and Mr. Hilton said that the U.S. is not doing a good job in using biomass and refuse for energy purposes and that the U.S. in this field has a lot to learn from Sweden and other countries. The Swedish Minister for Enterprise and Energy, Maud Olofsson, did at a meeting at the U.S. embassy point out that Sweden is using a lot of biomass and refuse for combined heat and power production linked to district heating systems, which is a relatively unknown technology in USA. However, because of the recent years elevated focus on energy independence and on energy efficiency, there have been changes in the energy policy of USA that were almost impossible previously.

The new energy policy of the Obama administration is a policy with big visions for the future concerning the U.S. energy consumption. It aims

- to create five million “green jobs” within the next ten years,
- to have 1 million plug-in-hybrids on the U.S. roads by year 2015,
- to reduce CO₂emissions by 80 % by year 2050 through a cap-and-trade system, and
- to weatherize one million homes annually.

The Recovery Act

The Recovery Act, signed in February 2009, includes incentives to “jump start” the U.S. economy and to create new jobs. The money earmarked for energy is administered by the DOE (Department of Energy).

This includes the work with the new legislative standards for fuel mileage (i.e. vehicle fuel consumption) that the former president started in 2007, an incentive that the President Obama now has accelerated. The automakers were previously very opposed to such standards. The focus on nuclear energy was lowered in the Recovery Act by the Congress, since the area has been a problematic issue ever since the nuclear incident at “Three Mile Island”. To make all the progress with the Recovery Act transparent, everything is posted at the website “recovery.gov” with weekly updates.

The American Clean Energy and Security Act

Another important action from the administration in the energy area is the American Clean Energy and Security Act. This Act, also called the Waxman/Market Legislation, aims to establish a cap-and-trade system and make CO₂ reductions possible. It essentially consists of four parts;

- Clean Energy
- Energy Efficiency
- Reducing Global Warming Pollution
- Transition to a Clean Energy Economy

Mr. Hilton noted that President Obama’s green leadership is popular both inside and outside the U.S. He also noted that, although the environmental and energy related goals of the European Union and the U.S. in the short term differ they are similar in the long run.

Mr. Hilton also underlined that the U.S. Embassy’s work here in Sweden concerning energy and climate has revolved around, and probably continuously will revolve around, “one big thing”; the “A list”, that lists “green”, or cleantech, companies in Sweden with interesting solutions for American investments. The focus areas of the A-list are alternative fuels, engine technology and waste-to-energy.

Anders Hellner, Utrikespolitiska Institutet

Anders Hellner is a Senior Adviser and project leader at the Swedish Institute for International Affairs (Utrikespolitiska Institutet, UI). He has specialized in the field of energy and in regions such as the U.S., the Mediterranean, and the Middle East. He has frequently been a commentator on foreign policies in radio, television and newspapers and is now involved as a program leader in the digital channel Axess Television. Mr. Hellner has since 2008 been involved as a project leader for Business and Security in the North (BASIN), which is a joint collaboration between the Swedish Institute for International Affairs, the Stockholm International Peace Research Institute (SIPRI), and the Institute of International Affairs at the University of Iceland. One of the major tasks for BASIN is to study links between energy and security in the northern parts of the world.

Mr. Hellner has, after studies as a Brittingham/Viking scholar at the University of Wisconsin and University of Uppsala been working as a foreign correspondent in Rome for Swedish and Finnish newspapers. Following this, he has held a number of positions in both media institutions and academic institutes. Moreover, he has published a number of articles and books on Southern Europe (foremost Italy), the Middle East, USA, and the role of oil and gas in the global economy.

Mr. Hellner commented that the change in command in the White House brings hope both for the Americans but also globally. But, he noted, in the Obama administration, there are a lot of “old hats”, primarily from the Clinton administration. Mr. Hellner claimed that the Obama administration is not that “new” as it seemed during election times. All presidents are bound by certain principles and fundamentals that form the United States nation and its actions; the fundamentals are paramount in economy, culture and military powers.

Mr Hellner pointed out that the president and his administration have the executive power. However, there are two other powers too; the Congress that has the financial power and the Supreme Court that defines the Constitution from 1787. The President needs to consider both of them. Therefore, Mr. Hellner said, it is plausible that the Obama administration will have the same priorities as the former Bush administration, but in a different “style”. The 9/11 has profoundly affected both the former President and President Obama, the major difference being the way they address it, which may be important enough. Mr Hellner pointed out that it is likely that President Obama will not change the U.S. energy policy significantly. Many predict that the U.S. will still be heavily dependent of oil and that only 1% of the cars on the streets will be electric after the next 30 years. In reality, the statements about oil independence are almost the same as the ones of former President Bush.

President Obama is quite inexperienced in politics, Mr Hellner said, and many predict that he will be “bogged down” in one and a half year or so by the realities of the world, i.e. the situations in Israel and Palestine, China, North Korea, and in Afghanistan and Pakistan. President George W. Bush put democracy very high on his priority list, and somewhere along the way he transformed this to a Christian fundament in his way of expression. Mr. Hellner concluded his presentation by adding a few words regarding the rethorics and politics of President Obama. He said that the president is one of the great speakers of this time and that he is perceived as both sophisticated and educated. He will try to accommodate everybody’s wish, the map and the problems are the same, but the tone is different. The speech in Egypt some days ago were remarkable in this way. It is likely that President Obama will use his popularity to pursuit the ideals and fundamentals of the USA; a belief in their country and their constitution, idealism and use military power where necessary.

Marcus Carson, Stockholm University

Marcus Carson, PhD is associate professor at the Department of Sociology at Stockholm University. His research explores the role of cognitive models, institutions, and social movement organizations in policymaking and social change, and he has authored or coauthored several articles and book chapters on these topics. His current research focuses on policymaking dynamics connected to climate change and other environmental sustainability issues. He was previously involved for more than 15 years as an organizer and policy analyst with public interest organizations in the US. Carson's recent publications include "Sea Change: US Climate Policy Prospects Under the Obama Administration", co-authored with colleague Mikael Román.

For a more complete reference to Dr. Carson's presentation, we refer to the report he co-authored with Mikael Roman for the Swedish Sustainability Commission; Sea Change: US Climate Policy Prospects Under the Obama Administration (March 2009) (<http://www.regeringen.se/sb/d/11736/a/123902>). The report includes a brief summary in Swedish (pgs 11-14) and an overview of what the authors consider to be important considerations for the Swedish EU presidency and Copenhagen meeting (pgs 85-89).

Dr. Carson started his presentation by noting that Presidents Bush and Obama may have radically different perspectives on climate and environmental issues, but that they play by the same institutional rules in a country with the same diverse constituencies and interests. Nevertheless, while the shift in direction of the U.S. energy politics may appear small in the short term, there is a chance that in the long run the change could prove very significant. Dr. Carson is persuaded that the U.S. Congress will adopt legislation creating a cap-and-trade system for regulating CO₂ emissions during Obama's first term. However, he predicts it will initially fall far short of being able to achieve the goals recommended as essential by the IPCC. Any new U.S. cap-and-trade system will have to be strengthened and fine-tuned after the basic structure has been established.

President Obama has a packed agenda for the up-coming years and people have high expectations and are enthusiastic and are mobilizing for change. Dr. Carson noted that the silver lining of the economic crisis is it has already reduced the CO₂ emissions. The important question is how the U.S. sustains this positive change as it recovers. The Obama administration is addressing the "green economy" as the solution to multiple problems:

- Catalyst for economic recovery
- Energy security
- National security (some see climate change as a "risk multiplier")
- Improved energy efficiency
- Restore international credibility and prestige
- Climate change

A significant portion (nearly 20%) of the Recovery Act package was related to energy and climate, with planned actions for energy conservation, further development of renewable energy sources, smart grid technology, field testing of carbon capture and storage (CCS), etc. Over the past two decades, Dr Carson noted that there has been "gridlock" on environmental issues in the US Congress, and this was especially severe during the Bush/Cheney Administration. Positions have been locked and rather little in the way of significant new environmental legislation has been adopted. The stalemate on environmental policy in Washington has been fostered by not only partisan differences, but also by the geographic, social and economic diversity of the US. Different regions of the U.S. experience climate change and related policy remedies differently and the people who live in these different regions therefore look at climate change in different ways. In some states, energy production from coal sustains a large portion of the economy and provides jobs. The complexity of

public opinion is also substantial, with a wide spread in attitudes towards climate change ranging from “total believers” to “dismissive”. The different groups also react differently to alternative policy options. The creation of a Renewable Portfolio Standard (RPS) has strong support from 59 % of the population. However, only 10 % supports an increased gasoline tax. Dr. Carson noted that it is no accident that the Obama Administration has moved to strengthen RPS as one of its first policy initiatives.

During the eight years of the Bush-Cheney administration, it became quite clear that not much would be done in Washington to mitigate climate change. However, as Dr Carson put it, the grass roots response on climate change was to shift energy away from Washington toward the state and local level. While much of the world has been focused on the inaction in Washington, cities, states, and regions have begun to take significant action. Today, 912 American cities have committed to follow the Kyoto protocol and a significant number of states have already joined forces to begin implementing their own regional “cap-and-trade” systems for CO₂ emissions. So Dr Carson pointed out that the European Union and the U.S. are on parallel tracks with the same direction towards sustainability. Europe arguably remains the leader today. However with the new leadership in the US, a revitalized EPA, (Environmental Protection Agency), and substantial infrastructure investments, the U.S. might very rapidly catch up. Dr Carson finalized his presentation by the offering an analogy: There are two ways of steering a canoe in fast moving water; either you paddle to move slower than the current (like former president Bush) or you paddle to move faster than the current (like president Obama). Dr Carson said that the Obama Administration clearly believes in the benefits of the second strategy, such as possibilities to lead the world in developing new technologies, energy independence, etc., and thereby support future economic development, new jobs and competitive advantage.

Appendix C: Svensk uppströms oljeindustri - utmaningar och framtidsutsikter

NOG-Seminarium den 9 september 2009

Hanna Paradis och Mårten Nilsson

2009-10-05

Förord

Svensk oljeindustri förknippas vi framför allt med import och med raffinering och marknadsföring. Det finns dock ett antal intressanta företag med svensk anknytning som verkar ute i världen, i konkurrens och samverkan med de internationella oljebolagen, inom produktion av olja och gas; d v s "uppströms". Några av dem är noterade på den svenska börsen.

Idag präglas olje- och gasutvinningen av möjligheterna att nyttja mersvåråtkomliga fyndigheter. Hur ser den tekniska utvecklingen ut för oljemarknaden uppströms framöver? Behöver ett mindre företag "nischas" sig mot vissa prospekterings- och produktionstekniker för att bli framgångsrika eller spelar man på samma plan som de större bolagen? Vilka marknader erbjuder speciellt intressanta möjligheter? Hur kan mindre bolag hantera riskerna och de finansiella kraven?

NOG-seminariet den nionde september samlade några av dessa företag och gav en introduktion av och en fördjupning i utmaningar, möjligheter och framtidsutsikter för de "svenska" uppströmsbolagen. Vi fick veta mer om företagets struktur och bakgrund och deras strategier för att möta utmaningar som relativt små bolag på en marknad med stora penningstarka aktörer. Seminariet tog ett helhetsgrepp på dagens olje- och gasmarknad genom de svenska bolagens ögon.

Talare var:

Fredrik Öhrn

President and CEO, SPE (Svenska Petroleum Exploration AB)

Eric Forss

Styrelseordförande, Alliance Oil Company

Robert Eriksson

Head of Investor Relations, Vostok Nafta

Ingolf Gillesdal

Chefsanalytiker, Nordea Markets, Norge

Ingolf Gillsedal, Chefsanalytiker, Nordea Markets

Ingolf Gillsedal är chefsanalytiker vid Nordea markets där fokus är global oljeservice och oljepris. Nordsjön och norsk kontinentalsockel är en viktig tillgång framförallt för Norge men även resursmässigt för hela Europa. Det finns stora möjligheter för företag att investera i Norsk kontinentalsockel då stödet från Norska staten är betydande.

Inom Nordeas Olje- och oljeservice-portfolio finns flera företag som Ingolf Gillsedal lyfter fram som "key recommendations":

- Det Norska Oljeselskap – företag verksamt på den norska sockeln med en stark exploateringshistorik. Fortsatt god utveckling är att vänta framöver.
- Seadrill – Djupborrande exploateringsföretag med modern flotta som på tre år byggt upp en stark verksamhet.
- StatoilHydro – en säker investering vid ett högt stabilt oljepris

Investeringscykeln på norsk sockel förnyas ständigt, nu händer mycket intressant kring produktion, ny seismik kan leda till nya upptäckter och nya teknologier, som exempelvis flytande plattformar och CCS kan ge nya förutsättningar för branschen.

Långsiktigt syns en satsning mot djupvattenexploatering inom branschen, men denna exploatering är mycket kapitalintensiv. Nya regioner är Mexikanska golfen, Västafrika och Brasilien. I framtiden kommer denna form av utvinning att bli allt vanligare. Nordsjön och England har nått sin "peak production" år 2001, men fortsatt ser vi stora investeringar på norsk sockel.

På den norska kontinentalsockeln (Norwegian Continental Shelf, NCS) uppskattar man att ca 40 % av oljan är utvunnen och 25 % är funnen men man saknar de resurser som behövs för att ta upp den. Man bedömer även att 25 % av oljan inte har hittats. Bland annat finns det fyndigheter utanför Lofoten i Nordnorge men den norska regeringen har inte gett klartecken för utvinning.

Exploateringen har varit blygsam under lågkonjunkturen. På norsk sockel har det efter 2005 blivit lönsamt att leta efter nya oljekällor då 78 % av kostnaderna återbetalas. Detta har gjort att antalet borrhade brunnar ökat kraftigt fram till 2008 och även antalet företag som borrar. Nu har dock lågkonjunkturen gjort att det letas mindre på grund av kostnaderna.

Statoil är det dominerande företaget på NCS då de stora jättarna inte är så aktiva. Skulle den norska regeringen öppna upp för utvinning utanför Lofoten blir även de största företagen mer aktiva men som det är nu investerar de hellre på andra platser.

Priset på olja behöver vara högt för att det ska vara lönsamt att utvinna olja ur djupvattenkällor. Kostnaderna för utvinning från djupvattenkällor gör att oljepriset måste ligga på mellan 60 till 70 dollar per fat för att verksamheten ska vara lönsam. Generellt så är oljebolag mycket flexibla och lägger inte långa planeringsplaner för att kunna anpassa sig till marknadsläget. Under lågkonjunkturen har bolagen varit försiktigare än vanligt med investeringar för att hålla nere kostnader.

Efter oljeprisets fall styr OPEC prisutvecklingen hårdare och siktar på att hålla priset på en nivå runt 57 dollar per fat.

Avslutningsvis konstaterade Ingolf Gillsedal att spekulationer har stor del i prissättningen på olja. OPEC styr prisen till viss del men över den nivån är det spekulationer som sätter priset. Under finanskrisen har kopplingen mellan dollarkursen och oljepriset varit väldigt stor.

Fredrik Öhrn, President and CEO, Svenska Petroleum Exploration

Koncernchef och VD för Svenska Petroleum Exploration AB. Fredrik är geolog från Uppsala Universitet och har en Master i Business Administration från University of Massachusetts, USA. Han har en bakgrund från Boliden där han var verksam inom främst råvaruhandel från 1988-1997.

Mellan 1999 och 2006 har Fredrik innehaft posten som CFO i ett antal företag inom råvaror och bioteknik. 2006 tillträdde han som CFO för Svenska Petroleum Exploration AB. 2008 tog han över rollen som Koncernchef och VD.

Fredrik Öhrn presenterade Svenska Petroleum Exploration, ett privatägt Stockholmsbaserat oljebolag. SPE bildades 1969 under namnet Oljeprospektering AB (OPAB), som ett initiativ från svenska regeringen i syfte att leta efter olja i Östersjön. Man hittade lite olja på Gotland men inga större mängder. Idag ägs SPE av Sheikh Mohammed Al-Amoudi (som också äger Preem AB) och man fokuserar numera verksamheten på fyndigheter utomlands och har huvuddelen av sin verksamhet i Norge och Västafrika. De har idag en omsättning på knappt 2 miljarder och är helt skuldfria.

SPE jobbar hårt med att knyta kontakter och ta licenser genom sitt nätverk i Afrika. Detta arbete försvåras av att oljebranschen ofta är nära förknippad med verksamheter på statlig- eller regeringsnivå i länder som ofta har skakiga demokratiska system och regelbundna konflikter. SPE upplever ändå att trots detta så går det bra att arbeta i dessa länder. De arbetar mycket med affärsutveckling och relationsbyggande i dessa länder. Korruption är ständigt närvarande men som svenskt bolag kan man ofta hänvisa till svensk uppförandekod och undkomma korruptionsproblematiken. SPE:s norska innehav fungerar som en motpol till det afrikanska. På grund av fördelaktiga statliga subventioner från den norska staten är det lönsamt att leta efter olja på den norska kontinentalsockeln, men inte en lika lönsam affär att utvinna den. Förutom ovanstående så är kostnader den stora utmaningen för ett litet bolag som SPE. Investeringarna kan ofta bli mycket stora innan ett fält kommer in i produktion och börjar generera inkomst.

SPE är idag ett rent offshorebolag med en stor andel djupvattenlicenser. Den tekniska utvecklingen inom djupvattenborrning är fantastisk, men verksamheten är dyr och tidskrävande. De är helt inriktade på att hitta oljefyndigheter och har inget intresse i gasmarknaden. SPE fungerar inte som operatörer av fält utan är inriktade på att vara med i tidig- till midlife-fas i projekt.

SPE:s strategi för framtiden är enligt Fredrik Öhrn att växa genom förvärv då det ofta går för långsamt att växa organsikt. Fokus kommer även i fortsättningen att ligga på utvinning av olja snarare än gas. SPE kommer fortsätta att satsa på sina marknader i Norge och Västafrika då det är där de har teknisk och kommersiell kompetens. Sheikh Mohammed Al-Amoudi har även nära kopplingar till Afrika vilket underlättar arbetet att säkra areal. Just nu så tittar man på att säkra en licens för att borra en struktur i Lettland. Man har även försökt att få tillstånd att borra i Sverige, men har där fått ett nekande.

SPE har idag en prospekteringsportfölj med ett antal fynd i Nigeria, Norge och Guinea Bissau. Ledtiden från projektering till första oljeproduktionen är tre till fem år och SPE siktar på att investera kraftigt i prospektering under 2010 – 2011. SPE skulle dessutom behöva ytterligare producerade tillgångar i närtid, detta kommer att ske genom förvärv för att komplettera produktionen från Baobab som är SPE:s enda stora producerande fält. Fredrik Öhrn tycker att oljebranschen är en bransch som erbjuder tekniska, politiska, vetenskapliga och ekonomiska utmaningar men framförallt så är den både rolig och spännande att verka i.

Robert Eriksson, Head of Investor Relations, Vostok Nafta

Vostok Nafta grundades 1996 av Adolf Lundin. Idag ägs 30 % av aktierna i bolaget av familjen Lundin och totalt är det svenska innehavet ca 50 %. Vostok Nafta är ett rent investmentbolag vars verksamhet är fokuserad på Ryssland och Rysslands grannländer. Avkastningsmålet för affärerna är att de ska trefaldigas på två år. Detta ska vara möjligt genom att göra investeringar i företag med s.k. "Sovjetisk risk". Med detta menas att de är illa genomlysta då de tidigare har skötts som statsmonopol.

Vostok Nafta hade tidigare ett stort innehav i Gazprom med uppemot 90 procent av sin portfolio i företaget. Detta gjorde att man valde att dela företaget och bilda bolaget Vostok Gas där Gazpromaktierna placerades. Värdet på Vostok Gas steg kraftigt mellan 2003 till 2007. När lågkonjunkturen kom föll Moskvabörsen mer än den övriga världsekonomin bland annat på grund av krisen i Georgien, hög belåning hos oligarkerna samt det fallande priset på olja. Det medförde att man sålde och avvecklade Vostok Gas. Robert Eriksson tror dock att man har sett det värsta av den finansiella krisen i Ryssland.

Robert Eriksson påpekade att Ryssland värderas lågt i jämförelse med den förväntade utvecklingen i vilket gör det till en lukrativ marknad. Det visar även förväntningarna på ett högt oljepris vilket indikeras av den snabba återhämtningen av priset. Ett högre oljepris är oundvikligt i framtiden då man räknar med att oljeproduktionen kommer minska med 100 miljoner fat per dag till år 2030.

Vostok Naftas portfolio innehåller till stora delar företag inom jordbruk, finans, olja, energi och råvaror. Robert Eriksson presenterade några av dessa.

- LUKoil. Rysslands näst största oljeproducent. De har stora reserver på 19,3 miljarder fat oljeekvivalenter och raffinerar och säljer sina egna produkter vilket är fördelaktigt av skatteskal i Ryssland. Vostok nafta gjorde förvärvet i somras.
- Black earth farming. Köper upp jordbruksmark i Ryssland (Black earth region) och kontrollerar idag 323 000 hektar jordbruksmark.
- Tinkoff Credit Systems. Ett av de första kreditkortsbolagen i Ryssland. I Ryssland går det idag ett kreditkort per 20 personer varför det finns potential att växa. Problem finns på grund av finanskrisen då pengar måste in i företaget.
- RusForest. Skogsföretag som äger avverkningsrätter i Sibirien på över 1 miljon hektar skog. Denna del av världen har de lägsta priserna på el vilket gör det gynnsamt för uppbyggnad av exempelvis sågverksindustri.
- Clean Tech East. Tillverkar tillsatser till oljeeldade kraftverk. Har investerat i en pelletsfabrik i Ystad tillsammans med Fortum Värme som inledningsvis också köper allt som produceras. Ytterligare fabriker planeras byggas i Ryssland.

Vostok Nafta föredrar generellt att investera i entreprenörsföretag som har egna idéer. Man blandar långsiktiga investeringar med mer kortsiktiga insatser. Man ser sig själva som aktiva ägare i de bolag man investerar i.

Eric Forss, Styrelseordförande, Alliance Oil

Styrelseledamot i Alliance Oil Co sedan juli år 2004. Eric Forss har en B.Sc.examen (ekonomi) från Babson College, Wellesley, MA, USA. Han är sedan 1998 koncernchef för Forssgruppen och sedan 2005 verkställande direktör för S.O.G. Energy Svenska Oljegruppen AB.

Åren 1991–1998, var Eric Forss verkställande direktör för Forcenergy AB, ett börsnoterat svenskt olje- och gasbolag, där han även var vice verkställande direktör åren 1990-1991. Han har också uppdrag som styrelseordförande för Mediagruppen Stockholm MGS AB. Därtill är han styrelseledamot i Forcenergy AB, Forsinvest AB och S.O.G. Energy AB. Forss har varit styrelseledamot och rådgivare i flera publika och privata svenska och internationella bolag, bland annat oljekoncernerna Forest Oil Inc. och Forcenergy Inc.

Eric Forss startade sitt arbete i oljebranschen i USA, både inom up-stream och oljehandel. År 2004 blev han introducerad för en ung rysk entreprenör som precis köpt ett oljebolag. Deras kunskaper kompletterade varandra då Eric var kunnig inom olja och hans blivande affärspartner hade god kunskap om Rysslands förutsättningar. Företaget startade som en lokal operatör med en produktion på cirka 2000 fat per dag på en framför allt lokal marknad. Dålig lönsamhet gav att de snarast började bygga uppströms tillgångar genom förvärv för att öka lönsamheten. Idag har Alliance Oil cirka 7000 anställda, 6998 ryssar och 2 svenskar säger Eric skämtsamt. Sedan 2004 har man genomfört sex stycken större förvärv och har idag en reservbas på cirka 500 miljoner fat. Under 2008 så gick man ihop med Alliance Oil (företaget hette tidigare West Siberian Oil) och fick då även en nedströms verksamhet. Det är mycket fördelaktigt att ha en heltäckande produktions- och distributionskedja i Ryssland skattetekniskt. Idag så har Alliance Oil både råoljaproduktion, raffineringsverksamhet och tankstationer inom sin verksamhet.

I framtiden så förväntar sig Alliance Oil att oljeproduktionen från ett par utvecklingsprojekt, där Timano-Pechora-regionen kommer att stå för den största utvecklingen, kommer att öka Alliance Oils oljeproduktion ytterligare.

Eric försöker vidare förklara de olika faktorer som lett till den utveckling som Alliance Oil haft under de senaste fem åren. Naturligtvis så spelar en någorlunda gynnsam omvärld in, högkonjunkturen har varit hjälpsam och gjort att det funnits möjligheter till finansiering på kapitalmarknaderna, framförallt genom nyemissioner. Bemanningen av företaget har varit lyckosam och företaget har kunnat ömsa skinn i den takt som krävts. Till skillnad från svenska bolag som försökt etablera sig i Ryssland så ses Alliance Oil i Ryssland som ett ryskt bolag, noteringen på den svenska börsen till trots. Företaget följer svensk bolagskod rakt igenom hela bolaget vad gäller redovisning och kontrollsystem, detta ger att man kan vara mycket öppna och transparenta. Stigande oljepriser under perioden har också givit bra marginaler på Alliance Oils produktion, upptagningskostanden för oljan idag ligger på cirka 4 USD per fat och investeringskostnaden på 8 – 9 USD per fat.

Under det fjärde kvartalet 2008 så hade Alliance Oil en tuff period då det knappt lönade sig att sälja olja. Man drog även hårt i handbromsen i sin investeringsverksamhet. Nu ser man en ljusning på marknaden och börjar titta på nya investeringar. Rörelseresultatet för 2009 kommer troligtvis att landa någonstans mellan resultaten från 2007 och 2008. Dock så anser Eric Forss inte att finanskrisen enbart har varit av ondo. Det skapas möjligheter att förvärva bolag som pressas av det ekonomiska läget samt att det finns möjligheter till kostnadsreduktioner vid hyra och köp av utrustning. För de bolag som tar sig igenom krisen på ett bra sätt finns stora möjligheter att fortsätta växa och Alliance Oil räknar med att de kan vara ett av de bolagen.

Appendix D: Energiscenarier för en hållbar framtid- fungerar kopplingen mellan vetenskap och verklighet?

NOG-Seminarium den 22 oktober 2009

Johan Söderblom och Johan Viksten

2009-10-26

Foreword

Qualified assessment of the future global energy security is complex and involves many uncertainties. At the same time, we depend on them for rational planning and policy decisions. Factors such as population growth, employment, migration and rising prosperity is driving the development within the limits of environmental sustainability and access to resources such as energy and water. All these factors interact and make demands on tomorrow's technology, politics and economics.

One of the tools we currently use to manage energy-related problems is energy scenarios.

Today's seminar will describe how the different organizations are working on energy scenarios with a focus on the following key areas:

- In which way are different energy scenarios built up, which parameters are included, and perhaps even more interesting, which are excluded?
- What do the different scenarios tell us and what implications may they have globally and regionally?
- In which way are the results of various energy scenarios used as a basis for policy decisions related to energy and climate?

Speakers:

Gunnar Jungk

Senior Legislative Advisor, European Government Affairs, BP

Shilpa Rao

Researcher, International Institute for Applied System Analysis (IIASA)

Terje Sørenes

Senior Economist, Norwegian Petroleum Directorate

Malin Lagerquist

Executive Officer, System Analysis Department Unit, Swedish Energy Agency

Gunnar Jungk, Senior Legislative Advisor, European Government Affairs, BP

Gunnar Jungk, Senior Advisor at BP, held a presentation titled *World Energy Situation – Today's trends and tomorrow's challenges*. Gunnar started by giving a brief presentation of BP, which is a company that is about hundred years old and the 11th largest in the world at the present. They employ 92,000 people in more than 100 countries and process about 3.8 million barrels oil equivalent a day.

Gunnar sees climate change as one of the biggest challenges for this century, especially since it is accompanied with a growing world population and constrains in the supply of oil, gas and coal. These challenges are however manageable, and the key factors for this is technology development and development of functioning energy policies. According to Gunnar, peak oil production is not the issue for the near future. There will be oil for at least 40 more years and gas for about 50 years. The question is rather where this oil is located and how supplies can be developed and brought to market.

A prognosis from the International Energy Agency (IEA) predicts that the energy demand will rise with 45 % until the year 2030. A dominant share of the increase is expected to be supplied by fossil fuels. Changes in the energy demand and supply is a slow process.

According to Gunnar there is enough oil to fill the future demand, and the OPEC will be supplying a growing share of this. The oil reserves of the world at the end of 2008 were 1,400 billion barrels and 56 % of this was situated in the Middle East, which is believed to stay in a leading position in the world's oil production. The European possibilities to find new oil resources of importance are mainly concentrated in Russia and the Caspian Sea, however being of lower quality and in need of more processing than the reserves in the Middle East.

The latest edition of *BP Statistical Review of World Energy* was released in June 2009. It contains statistics of reserves, production, consumption and prices of energy divided into different carriers. The review shows that the three largest energy markets (North America, Europe and Asia Pacific) are consuming 78 % of the world's oil, but hold only 10 % of reserves. There is also a large dislocation of supply and demand in gas, less so in coal. Investments infrastructure will therefore be of big importance for the future. There is also a major imbalance in the product markets; gasoline is traded westward to the US, while Europe depends on gasoil/diesel imports from the East.

Europe has a variety of supply options of gas, and there are several initiatives to increase the flexibility of supply. For this to be possible, Gunnar states, market liberalization is a key aspect.

The increase of carbon dioxide in the atmosphere is alarming and there is no need to wait for more research, instead we have to act now. The challenge for BP is finding out how much fossil fuel the atmosphere can handle. Besides that they invest in renewable energy and CCS projects. Gunnar states that it is of importance to have a realistic idea of the contribution from renewable energy, and that even the most optimistic estimations do not believe that renewable energy can contribute with more than 10 % of the energy demand by the year 2030. Bridging technologies are therefore essential; CCS could make an important contribution, possibly dealing with as much as half of the carbon dioxide reduction that is needed. Gunnar concluded the presentation saying that he is optimistic for the future and that he believes that energy companies can make an important contribution when dealing with climate change issues.

Shilpa Rao, Researcher, International Institute for Applied System Analysis

Shilpa Rao is a researcher at the IIASA, which is an international research institute situated in Austria. The title of her lecture was *Global Challenges: The energy perspective*. Shilpa mainly works with greenhouse gas scenarios and sustainable development. IIASA started in the seventies as a bridge between the east and west during the cold war. Today the IIASA has 18 member countries, Sweden being one of them, and they work with different issues of global change for the benefit of the public the scientific community, and national and international institutions.

Shilpa states that there are many challenges for the future energy supply. The most important challenge is to provide energy for the two billion that today have almost no access to commercial energy at all. There is an imbalance between the north and south part of the world and energy is strongly connected with food resources. Energy poverty is common e.g. in Africa and India. To illustrate this, pictures are shown of two families and the food that they consume during one week, one being a Sudanese family living as refugees in Chad, and the other a German family. Shilpa reminds the listeners of the importance of having these kinds of pictures in mind when discussing the global energy situation. Afterwards a mapping of the global energy access is shown by satellite pictures of the earth at night, thus showing which regions that use most of the electric light.

There are links between poverty, overpopulation and pollution. Exposure to pollution has effects on the public health as shown by estimates of mortality rates in China related to pollution of different kinds.

According to Shilpa there are however positive trends that can be seen, taking the previous presentation from Gunnar Jungk at BP and their investment in renewable energy as an example of the changes that are occurring. Another example given is the state of Hawaii that aims at deriving 70 % their energy from renewable sources by the year 2030. Technological learning is important, demonstrated by statistics of the global increase in investments in technologies for renewable energy and the decrease of the ethanol price due to increasing investments.

After a presentation of the historical development of the global primary energy usage, Shilpa presents examples of IIASA's scenarios regarding future energy usage. The assumptions for the scenarios vary regarding economic development, technology change and population development. However, the world population is assumed to decrease sooner or later in all of the scenarios. Also the energy intensity is assumed to decrease in all of the scenarios. The energy use until year 2100 in the different scenarios vary substantially, with renewables taking a larger share of the total, particularly in the environmentally more ambitious scenarios. The concentrations of greenhouse gases are however increasing in all of the scenarios, causing the mean temperature to increase more than 2.5 degrees Celsius even in the most optimistic scenario. Shilpa thereby concludes that unless the COP 15 in Copenhagen can perform miracles it is already too late to prevent large scale effects due to climate change.

A number of changes need to be carried out to approach a more sustainable future. Key technologies are CCS, also from biological sources, fossil fuel switch from coal to gas. Nuclear energy will be an important contributor to a low carbon future Land-use change and behavioral changes to reduce demand are important factors. Substantial investments in renewable techniques are also of big importance as well as in infrastructure and grids to facilitate these changes. Contributions will also have to come from, and investments be made in, developing countries already in the short term.

Terje Sørensen, Senior Economist, Norwegian Petroleum Directorate

Terje Sørensen from the Norwegian Petroleum Directorate (NPD) held a presentation titled *Energy Scenarios for a Sustainable Future – The Norwegian Continental Shelf*. The Norwegian Petroleum Directorate was established in 1972 and reports to the Ministry of Petroleum and Energy. Their mission is “creating the greatest possible value for society from the oil and gas activities by means of prudent resource management”. They follow-up and inspect the larger oil fields of Norway, take initiatives for better resource management as well as produce analysis and forecasts of the resources.

Terje presents the basic figures regarding the Norwegian oil production. At the present Norway is the 6th largest exporter of oil in the world (including NGL/condensate) and the 3rd largest natural gas exporter. The production has reached its peak a few years ago and has decreased during the last few years. The top 5 importers of Norwegian oil in 2008 were United Kingdom, Netherlands, France, Germany and Sweden. Importation of natural gas is almost the same except for Sweden.

Terje states that the Norwegian gas export to United Kingdom has contributed to reducing the emission of carbon dioxide since United Kingdom have been able to reduce their usage of coal.

The Norwegian Continental Shelf has had a rapid growth of fossil fuel production during the last 40 years. According to Terje Norway still have reserves and resources to be a significant exporter for the next 40 years as well. They have by far the largest reserves in Europe. Seen in a global perspective, however, Europe has a small portion of the resources in comparison with Middle East.

Terje refers to the outlook from the International Energy Agency (IEA) saying that the demand for energy will increase with about 45 % up to 2030. Therefore he concludes that there will be dependence on fossil fuel also for the next 40 years. This will lead to environmental challenges, especially climate change, which needs international agreements and measures. Terje however tells the listeners not to have to high expectations for the COP 15 in Copenhagen since it is only the start of a process to reach a new agreement.

The NPD released a report in September 2009 regarding the petroleum resources on the Norwegian continental shelf and the challenges they are facing. The report shows that technology development is needed to be able to extract more of their oil resources. The Barents Sea has environmental challenges making it difficult to operate in the area. The Norwegian Sea likely has more gas and condensate resources, but due to the geological conditions it is difficult to explore. As for the North Sea the larger fields are already explored and the remainder are small fields. Because of this Norway has not opened any large fields since 1994, but Terje believes that there are resources to be found and NPD is hoping to open new areas in the future. This is however planned to be done with caution and not all at once.

Terje presents a few different forecasts about the oil price that have been made during the last 50 years. The conclusion is that they are in most cases far from coming true. However, Terje suggests that making scenarios might still be of importance even though most of them will not come true, quoting the French oil executive Pierre Wack who said that “The point is not so much to have one scenario that ‘gets it right’ as to have a set of scenarios that illuminates the major forces driving the system, their interrelationships, and the critical uncertainties”. Merging the resource uncertainty, possible climate policies, and different price expectations to scenarios for production on the NCS, provides a broad range of outcomes. In the low resource scenarios, NCS role as an important petroleum province will decline rapidly towards 2050, while in the more resource optimistic scenarios NCS will remain an important producing region for decades.

Malin Lagerquist, Executive Officer, Swedish Energy Agency

Malin Lagerquist is Executive Officer at the Department of system analysis, Swedish Energy Agency and held a presentation on the topic *Policy making and Energy scenarios*. A presentation of the Swedish legislation process was given and the electricity certificate system was used as a case study of an ongoing political work within the energy field.

Malin starts by discussing the importance of evaluation of the present situation as a basis for decision making. The assessments can tell us whether or not we are on the right path. The scenarios for the future can tell then us where we will be if we continue in the same direction. Furthermore, assessments are partly performed because Sweden has obligations under the Kyoto protocol, and therefore need to be able to present statistics of the energy usage.

Energy scenarios can be used in the Swedish legislation process on different levels. It can indicate that an action is needed, leading to a proposal to the parliament. When the parliamentary committee gathers, the scenarios can be used as a basis for discussion. Finally the scenarios can be used when implementing a new law or regulation.

The electricity certificate system was introduced in 2003 to increase the share of renewable energy production in Sweden. Certificates are given to the producers of electricity out of renewable energy. Theses certificates can then be traded and the producers are thereby given an additional income. To make sure that there is a demand for the certificate, the suppliers of energy are obligated to buy certificates in proportion to the amount of energy that they sell.

The government wants to increase the amount of renewable energy further, so that it reaches 25 TWh by the year 2020. Therefore the Swedish Energy Agency was asked to make scenarios for what this means for the certificate system. For this to be possible a prognosis of the energy usage and production was needed.

Malin shows the results of the scenarios that were made. A graph illustrates the proposed new quota that is needed to reach the goals. This information has been presented to the government and at the moment a discussion is going on. A suggestion for the parliament is expected and this will likely lead to a long discussion before any decision can be made. And even though the scenarios that where made will not always lead to an actual decision being made, they will start a discussion, which Malin believes is always a good thing.

Appendix E: Indien - energiutmaningar i en tillväxtregion

NOG-Seminarium den 2 december 2009

Johan Söderblom och Anna Nordling

2009-12-04

Förord

India is the country after China that is often highlighted by the West as a major growing region in a variety of areas. A continuation of economic growth which the country experienced during the past decades contains a variety of challenges- not least in the energy field where the domestic energy resources are relatively scarce.

An increasing energy consumption in countries in the Indian Ocean region reveal a changing picture of supply and demand in the area. Some parts of this region are characterized by instability and by a two-sided mistrust. In addition, non-conventional threats such as piracy attacks have had an impact on energy transport in the Indian Ocean region and have, among other things, resulted in agreements on energy security within the framework of regional cooperation organizations.

The NOG-seminar at December 2 begun with a general background. The series of presentations were related to India and the neighboring countries current and future energy supply and safety aspects. The seminar was concluded with a presentation of the Indian household energy at the micro level.

Speakers:

Ingolf Kiesow

(Opening speaker and Session chairman)

Former Ambassador, researcher at Institute for Security and Development Policy

Ponugoti Venkateswar Rao

Director, Centre for Indian Ocean Studies, Osmania University, Hyderabad

Rolf Danielsen

Analysts, Skandinaviska Enskilda Banken (SEB)

Samuel Strandberg

Former researcher in the field of Indian village development, Stockholm University

Ingolf Kiesow, Institute for Security and Development Policy

Mr. Ingolf Kiesow has been working as a diplomat for many years in different Asian countries, and during the years 1997-2000 he was the Consul General in Hong Kong. Besides this Mr. Kiesow has also been working as a Senior Researcher at the National Defense Research Agency in Stockholm and the Central-Asia-Caucasus Institute, Silk Road Studies Program, in Uppsala. Currently Mr. Kiesow is a Senior Research Fellow and Member of the Board at the Institute for Security and Development Policy in Stockholm.

Mr. Kiesow was the chairman for the seminar and also held an opening presentation, giving an introductory background to the current situation in India.

India consists of 28 different states, which makes it a difficult country to govern. For many years India was socialistic, though a planned economy never succeeded in such a widespread country. At the time of economic liberalization a rapid development started and the economic situation has continued to increase rapidly since then. However, there is still a large part of the population that lives in poverty and India is ranked 103 in the world in GDP per capita. Illiteracy is also enormous, currently around 40 % according to statistics from the World Bank.

From the years 1997 to 2007 the GDP growth in India was at an average 6.9 %. Even during 2008 when the world economy experienced a big crisis the Indian GDP growth was 7.4 %. India can, according to Mr. Kiesow, still be considered well integrated in the global economy, especially in the service sector.

The energy mix in India, according to the US EIA, consists of about 53 percent coal, 31 percent oil, and 8 percent natural gas. The rest consists of hydropower and smaller portions of nuclear power and renewable energy sources. Mr. Kiesow notes that this gives a partly misleading picture of the energy situation since many people in India uses wood and manure as their primary energy source, something that is not included in this statistics.

India is a large oil consumer and uses one fifth of the oil that is consumed in Asia at the moment. The domestic oil resources are however very small and they are therefore highly depending on countries in the Middle East. According to Mr. Kiesow this is something that the Indian government strives towards changing.

There are a few conflicts between India and neighboring countries, which has an influence on the energy situation. The conflict with Pakistan has been going on for a long time and the reasons are many, but one of the issues is a competition for energy. Most of the hydropower in northern India comes from the Kashmir area which is the center of the conflict with Pakistan. A discussion is however held about a cooperation where a pipeline is build from Iran, through Pakistan, delivering gas to India. According to Mr. Kiesow this is opposed by the US since they do not want India to be depending on Iran. Because of this the US offers support in form of nuclear power and military cooperation.

Ponugoti Venkateswar Rao, Centre for Indian Ocean Studies

P. V. Rao is currently Professor of Political Science and Director of Centre for Indian Ocean Studies, Osmania University, South India. He obtained Master of Philosophy and PH.D on British Labour Party and European Unity from School of International Studies, Jawaharlal Nehru University, New Delhi. Professor Rao has published six books and a number of articles in leading journals on Indian Ocean.

Professor Rao held a presentation titled *Energy Security in Indian Ocean Region*. The presentation was opened by showing a map of the Indian Ocean Region (IOR) and a number of critical geographical “choke points”. These areas have a dominating position for the transport of energy within this region as well as the global export of energy resources. The map also shows that India is surrounded by areas that are important from an energy perspective, such as the Gulf states, and that transport of energy resources often passes India. Issues regarding energy is influencing the politics in IOR to a large extent already and this is likely to increase in the future.

There are forecasts about energy consumption that predicts that Asian countries will account for two thirds of the global energy demand by 2030. This is due to a number of factors, such as increasing population, industrialization and urbanization. China and India are likely to still be the largest consumers though Professor Rao emphasizes that many other countries in the IOR, such as Indonesia, Thailand, Vietnam and Philippines are also increasing their energy demand rapidly. These countries will therefore also be important factors in the competition of the energy resources.

Professor Rao believes that the Asian countries should be given more focus than they are at present when the global energy situation is analyzed. The rural population of India is also often neglected in most analyzes, since these are not depending on the energy sources that are being accounted for in the statistics. A considerable section of the Indian rural population still get their energy from such sources as wood residues and cow dung.

At present large supplies of the IOR energy resources are imported from the Gulf states. For political reasons there is a strong will to be less dependent on this region and India as well as other Asian countries are looking for new regions, which could supply them with fossil fuels. Africa is one of the regions that have been in focus for what Professor Rao refers to as a “Scramble for oil”, but also countries such as Vietnam and Burma. According to Professor Rao China is well ahead India and other Asian countries in this competition for resources.

Although competing for energy resources, Professor Rao claims that China and India are making efforts to cooperate within the energy field. He does not see any risk of warfare between the two countries in the future and although some border clashes have been taking place during the last few years these should be considered as local incidents. An agreement to cooperate in a number of energy projects has been signed by China and India, though the results are yet to come. During the years 2007-2008 India was involved in 38 energy projects in 18 different countries, though many are yet to send supplies home. There have also been a few collaborations trying to establish pipelines in the IOR, though none of these have succeeded so far. For example Professor Rao mentioned that Iran, Pakistan and India tried to establish a common pipeline but failed mostly because USA opposed Indian collaboration with Iran. Another example given was trilateral gas pipeline agreement between Burma, Bangladesh and India, but it flopped as Bangladesh withdrew from the partnership due to disagreements with India. Instead, China benefitted mostly from the Burmese supplies.

The transportation of resources is also an issue that must be considered when discussing the Indian Ocean energy situation. Pirates have been attacking transports in the IOR during the last few years and Professor Rao also mentions that “terrorists” have been active in the area. For example the Al-Qaida has used LNG tankers to get to the US. These problems also results in increased militarization of the region which is not conducive to regional peace and stability.

Rolf Danielsen, Skandinaviska Enskilda Banken

Mr. Rolf Danielsen has a background as a macroeconomist from the University of Oslo. He has worked as an economist/advisor at Norges Bank for more than ten years. He has also worked as economist at the International Monetary Fund in Washington DC and as a senior economist at the Institute of International Finance. Currently Mr. Danielsen works at the Skandinaviska Enskilda Banken (SEB) as head of emerging market research.

The presentation held by Mr. Danielsen was titled *India – economic prospects and energy balances*. The presentation began with a few comments on the challenges that India is facing due to widespread poverty and lack of electric power in many rural areas, whereas when in sufficient supply rampant theft (illegal connections to the power grid) discourages further development. The federal structure delegates wide-ranging powers to the state level which may complicate consolidation of local and federal interests.

Recent landslide election victory for the Congress led government coalition has raised hopes for renewed pick up in the reform process to support continued strong growth almost at the level of China's, following a slowdown to 7% in 2009. IT and high tech services will once again spearhead the development.

Despite wide-spread poverty, India is still not among the most unequal countries in the world in terms of personal incomes. The Gini coefficient (a measure of wealth distribution) ranks India somewhere in the middle relative to other countries, well below (more equal than) China, USA and Brazil.

Going forward India is likely to benefit from favorable demographic developments. During the last 20 years the dependency ratio has been in gradual decline, meaning a shrinking share of the non-working population.

About 53 percent of the Indian energy consumption is based on coal. Second largest is gas, making up about 31 percent. Without new discoveries, national oil and gas supply may not be sustained at the present level for much longer than ten years. Consumption of oil and gas is expected to increase rapidly and imports are needed to fulfill this need. IEA predicts that India will be the 4th largest importer of oil by 2025.

The electric power sector is designed to deliver more than 700 TWh per year and new capacity is being added every year. According to Mr. Danielsen there are obstacles to be overcome, regarding the regulatory regime and pricing mechanisms, to ensure supply meets future demand.

Skandinaviska Enskilda Banken has projected Indian GDP developments under various global scenarios using the Oxford Economics world model. The result shows clearly higher resilience of the Indian economy against negative external shocks than peers. A drop of 1 percentage points annually in world growth over the next few years will reduce the Indian annual growth rate by less than 0,5 percentage points. By the same token, Indian demand for energy which closely follows growth of GDP should remain relatively independent of world growth.

Samuel Strandberg, Former researcher at the Stockholm University

Mr. Samuel Strandberg has a background as a teacher as well as a researcher within the field of Indian rural development. In 2002 he was elected Honorary doctor of philosophy at the Humanistic Faculty, Stockholm University. He has written numerous books about India and started a travelling agency that specializes in Indian travels.

The focus of Mr. Strandbergs presentation was to explain the Indian development during the last fifty years on a grass root level. He did this by presenting a slide show of photos from his visits to a rural Indian village during the time period 1952 until present time.

In 1952 Mr. Strandberg went to India by boat, a trip that at that time took about three weeks, to live in a small rural village and write a paper about his experience. The aim of the study was to make a detailed description of the village and their economic situation.

The development during the last 50 years or so is in many fields radical, even though the village is still far from having the standard of the larger Indian cities. Electricity has been introduced in the village, giving many advantages that did not exist before, such as lighting and running water in some of the houses. Because of this the need to carry water long distances, a work devoted to the women of the village, is now not at all as common. Telephone, stationary as well as mobile, are also becoming increasingly widespread and thereby connects the village to the rest of the world. And today almost every household has a TV which is a big difference from the mid fifties when there was only one radio in the village.

Apart from the technical development Mr. Strandberg also reflected on the fact that the situation for the so called low caste has improved. Already in the 1950s it was demanded that the city council should have at least one representative from the low caste as well as at least one woman. Today the chairman of the city council is a low caste and he was elected by people from all castes, and according to Mr. Strandberg this is something that would not have happened fifty years ago.

Dried manure from cows is still an important energy source, but the usage decreases and instead gas stoves are becoming more widespread. The manure is instead used as fertilizers. There are also some initiatives to use the waste for biogas production. A family with 4-5 cows can be self-sufficient of energy if managing a proper biogas facility.

The development regarding modernization and material standards in this Indian village, presented by Mr. Strandberg, is evidently somewhat of a success story.